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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/786,519

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EXAMINER

OLANDER, GABRIEL D


ART UNIT

PAPER NUMBER

2879

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/786,519	Applicant(s) TOMIYOSHI ET AL.	
	Examiner Gabriel D. Olander	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/26/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1, 4, 6, & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soules et al (US 5,705,883).

Claim 1: Soules discloses a compact self-ballasted fluorescent lamp, comprising: an arc tube including a glass tube at least partially bent (fig. 1, 20), and electrodes sealed at both ends of the glass tube (stated in abstract), each electrode including a filament coil (fig. 2, 84); and a holder having a pair of insertion openings formed therein (fig. 2, 24), and holding the arc tube by fixing the ends of the glass tube inserted through the insertion openings, wherein the ends of the glass tube are inserted to such positions that enable each filament coil to be positioned within the holder so as to give heat transfer benefits (abstract).

Soules does not disclose a minimum distance L1, in an insertion direction of the ends of the glass tube, between each filament coil and an edge of the corresponding one of the insertion openings is in a range of 0 to 10 mm inclusive.

It is noted that inserting the glass tube into the member limits the exposed lamp (phosphor coated) surface and therefore limits luminosity of the device. Therefore, it is desirable to minimize insertion length of the glass tube end of Soules to maximize

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luminosity while achieving heat transfer benefits as taught. Consequently it would be obvious for one of ordinary skill in the art at the time of the invention to limit the length between each filament coil and an edge of the corresponding insertion opening to a range of 0-10 mm inclusive.

Claim 4: Soules discloses the compact self-ballasted fluorescent lamp of claim 1, wherein the arc tube has a double-spiral construction in which the glass tube is wound from a middle to both ends thereof around one axis (fig. 1).

Claim 6: Soules discloses the compact self-ballasted fluorescent lamp of claim 4, wherein a pitch of (a) each of both end parts of the glass tube and (b) an adjacent spiral part in a direction of the axis is larger than a pitch of other adjacent spiral parts, to widen a gap between each end part and the adjacent spiral part (fig. 1).

Claim 9: Soules discloses the compact self-ballasted fluorescent lamp of claim 4, comprising a double-spiral arc tube with a set diameter. The claimed diameter range of 30-40 mm does not solve any of the stated problems or yield any unexpected results that are not within the scope of Soules's Lamp. This claim is rejected as an obvious variation of design choice.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soules et al (US 5,705,883) in view of Skwirut et al (US 4,871,944).

Soules discloses all the limitations of claim 1 as detailed above.

Soules does not disclose the use of mercury as the enclosed gas or an inner glass tube diameter within a range of 5-9 mm inclusive.

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Skwirut discloses the use of mercury as the enclosed gas (abstract) as well as a glass tube diameter of 7 mm (line 46, column 18) to prevent sufficient cooling.

The addition of the glass tube diameter as shown in Skwirut to the compact self-ballasted fluorescent lamp as limited by Soules would be obvious to one of ordinary skill in the art at the time of the invention for cooling.

Claims 3 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soules et al (US 5,705,883) in view of Vrionis (US 5,581,157).

Soules discloses all the limitations of claim 1 as detailed above where in the holding member is cylindrical in shape (fig. 1)

Soules does not disclose that the arc tube is thermally connected to a globe covering via a heat conductive medium at a coolest position of the arc tube. Also, Soules does not disclose a case that fits over the member that holds the globe fixed in a state where an opening end thereof is fit in a gap formed between the circumferential wall of the holding member and the base.

Vrionis discloses a compact self-ballasted fluorescent lamp wherein the arc tube is thermally connected to a globe covering via a heat conductive medium at a coolest position of the arc tube (fig. 5, 460) so as to aid in heat transfer. Vrionis further discloses the holding member is cylindrical in shape (fig. 5, 170) with a case that fits over the member that holds the globe (fig. 2, 210 & fig. 5) fixed in a state where an opening end thereof is fit in a gap formed between the circumferential wall of the holding member and the base so as to secure the globe.

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The addition of the limitations as detailed above by Vrionis to the self-ballasted compact fluorescent lamp as detail in claim 1 by Soules would be obvious to one of ordinary skill in the art at the time of the invention so as to secure the globe.

Claims 5 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soules et al (US 5,705,883) in view of Arakawa et al (US 2002/0158567).

Claim 5: Soules discloses all the limitations of claim 1 as detailed above.

Soules does not disclose the use of 2-5 mg of said enclosed mercury.

Arakawa discloses the use of 2-10 mg mercury (lines 11-17, column 5) to be used as a luminous material.

The addition of specific amount of mercury as taught be Arakawa to the compact self-ballasted fluorescent lamp as limited by Soules would be obvious to one of ordinary skill in the art at the time of the invention so as to aid in light generation.

Claim 7: Soules in view of Arakawa discloses the self-ballasted fluorescent lamp of claim 5 including a glass tube with a winding pitch with respect to the axis. The claimed 60 to 120 degree limitation does not solve any of the stated problems or yield any unexpected results that are not within the scope of Soules's Lamp. This claim is rejected as an obvious variation of design choice.

Allowable Subject Matter

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references do not show or suggest a self-

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ballasted fluorescent lamp wherein a gap between the other adjacent spiral parts is in a range of 1 to 3 mm inclusive, and a distance between (a) a first point that is on each end and (b) a second point that faces the first point and that is on an outer surface of an adjacent spiral part in the direction of the axis, is in a range of 3 to 6 mm inclusive.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel D. Olander whose telephone number is 571-272-6011. The examiner can normally be reached on 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

G.D.

Gabriel Olander
Patent Examiner
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